

# Doppler broadening of the annihilation line study of organic-inorganic hybrid ureasil-based composites

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## Abstract

© Springer Science+Business Media Dordrecht 2015. The organic-inorganic hybrid ureasil-based composites, containing polyether chains covalently linked to a silica framework through urea bridges, referred as ureasilicates or ureasils, and semiconducting As<sub>2</sub>S<sub>3</sub> clusters, are investigated using Doppler broadening of annihilation line technique. It is established that the Doppler S and W parameters show significant structural difference between the pure ureasil and the As<sub>2</sub>S<sub>3</sub>-ureasil composites, the effect is more essential as the loading fraction of As<sub>2</sub>S<sub>3</sub> increases. The new Doppler broadening results obtained in this work are found to be in consistent with the earlier reported results of positron annihilation lifetime measurements of the same materials.

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## Keywords

Organic-Inorganic composites • Annihilation line study